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THE USE AND CARE OF STORAGE BATTERIES

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Minister

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THE USE AND CARE OF STORAGE BATTERIES

The storage battery as a piece of equipment plays a useful part in modern industry. It has a harmless appearance and there are no moving parts consequently they are not always treated with the respect they deserve. With proper handling and use they create no problems but careless handling and abuse creates many hazards that makes them dangerous. These hazards have been the factor involved in many painful and costly accidents.

The normal storage battery that is so widely used today is usually made up of a series of 2 volt cells, which in a charged condition consists of lead peroxide positive plates, spongy lead negative plates, rubber, wood or glass separator plates, and a rubber case which can resist the burning action of the sulphuric acid.

When a battery becomes discharged as a result of taking current from the battery the sulphuric acid turns to water and the plates to lead sulphite.

The only way to restore the battery to its charged condition is to pass an electrical current back through in the opposite direction. During the process some of the water breaks down into hydrogen and oxygen gas and it is the hydrogen gas which is so dangerous. This gas is always

present when a battery is being charged and may also be present for hours after the charging is finished. During this period, any spark or flame close to the battery can cause an explosion which may be very serious.

To eliminate this hazard the following points should be observed at all times:

- (1) Batteries should only be charged in a well ventilated room. The number of batteries being charged will govern the method of ventilation. Exhaust hoods and systems may be necessary where large numbers of batteries are being serviced.
- (2) Be sure vent holes in filler caps are clean before charging batteries.
- (3) There should be no smoking in the battery charging room or open flames. In cases where large numbers of batteries are involved it may be necessary to install explosion proof lights and equipment.
- (4) Charging leads connected to battery posts must be secure before the charging current is put through them. The current must be shut off before leads are disconnected for any reason to prevent sparking.

- (5) Blow a gentle air blast from the filler syringe across the filler caps to remove the hydrogen gas before working around a freshly charged battery.
- (6) It is a good policy to wear safety goggles when working around a freshly charged battery.

When using storage batteries, the following procedure should be followed:

- (1) When charging a battery, always remove the ground connection first and replace it last, in this way it is impossible to cause a short-circuit between the battery and ground.
- (2) Be careful not to drop any tools or metal bars, etc. across connectors of cells as the short-circuit will cause the battery to gas and the sparks may cause an explosion.
- (3) Keep battery terminals clean, tight and greased with vaseline. If they are loose the heavy current used when starting may cause an explosion or at least it will melt the lead post of the battery rendering it unserviceable.
- (4) Keep liquid level in battery $\frac{3}{8}$ " above the plates.
- (5) Check battery occasionally with hydrometer to determine condition. The readings indicate as follows:

1280—full charge,

1215—half charge,

1180—discharge.

Battery service men should wear acid proof clothing including goggles and rubber gloves for protection against the acid. A supply of clean water is essential for emergency flooding of acid splashes.